WATER RESEARCH

The Journal of the International Association on Water Quality

Contents, Author and Key Word Index
VOLUME 28, 1994

PERGAMON

WATER RESEARCH

Journal of the International Association on Water Quality

EDITORIAL OFFICE

IAWQ
1 Queen Anne's Gate
London SW1H 9BT
U.K.

Tel.: (44) 71-222-3848
Telex: 918518 WATAID G
Fax: (44) 71-233-1197

Executive Director and
Managing Editor
A. MILBURN*

Executive Editor
K. J. IVES*

Deputy Editor
W. A. HOROBIN

Publications Assistant
H. RILEY

REGIONAL EDITORS

Dr H. R. Eisenhauer*
Conservation and Protection
Environment Canada
Ottawa
Ontario, Canada K1A 0H3
Tel.: (1) 819 953 9365
Fax: (1) 819 953 9029

Chairman of the Editorial Committee
Region covered: Canada

Professor T. Matsuo*
Department of Urban Engineering
University of Tokyo
7-3-1 Hongo, Bunkyo-ku
Tokyo 113, Japan
Tel.: (81) 3-3812-2111 Ext. 6244
Telex: 2722111 FEUT J
Fax: (81) 3-3818-5946

Region covered: Japan and Western Pacific countries

Dr G. K. Anderson
Department of Civil Engineering
University of Newcastle upon Tyne
Claremont Road
Newcastle upon Tyne NE1 7RU, U.K.
Tel.: (44) 91-222-6406
Telex: 53654 UNINEW G
Fax: (44) 91-222-6669

Region covered: U.K. and developing countries

Dr-Ing. J. Dunglas
CEMAGREF
Directions des Programmes
Parc de Tourvoie
92160 Antony, France
Tel.: (33) 1-40-96-6124
Fax: (33) 1-40-96-6134

Region covered: France and all French-speaking areas

Professor M. Henze*
Department of Environmental Engineering
Technical University of Denmark
Building 115, DK-2800 Lyngby, Denmark
Tel.: (45) 45-884200
Telex: 37529 DTHDIA DK
Fax: (45) 45-932850

Region covered: The Netherlands and Scandinavia

Dr F. G. Pohland
Department of Civil Engineering
1140 Benedum Hall
University of Pittsburgh
Pittsburgh, PA 15261, U.S.A.
Tel.: (1) 412-624-1880
Fax: (1) 412-624-0135

Region covered: U.S.A. and Latin America

Professor P. Wilderer
Technische Universität München
Am Coulombwall
D-8046 Garching, Germany
Tel.: (49) (0) 89 3209 3700
Fax: (49) (0) 89 3209 3718

Region covered: Germany and all German-speaking areas

*Member of the Governing Board

GOVERNING BOARD: ***President: P. Grau, Czechoslovakia; Vice-Presidents: T. M. Keinath, U.S.A.; L. Lijklema, The Netherlands;*** **H. Arntsen,** Argentina; **D. Garman, P. Michel,** Australia; **H. Kroiss,** Austria; **W. Masschelein,** Belgium; **S. A. S. Almeida,** Brazil; **L. Dolapchiev,** Bulgaria; **J. D. Norman,** Canada; **G. Ruiz Troncoso,** Chile; **B. Wang,** China; **I. Hadjivassilis,** Cyprus; **D. Vanco,** Czechoslovakia; **A. El-Dib, F. El-Gohary,** Egypt; **M. Viitasaari,** Finland; **D. Ballay, J. Bebin, A. Le Souef,** France; **M. Dohmann, K. R. Imhoff, S. van Riesen,** Germany; **A. D. Andreadakis,** Greece; **L. Somlyody,** Hungary; **P. Khanna,** India; **S. Soemarto,** Indonesia; **E. Balasha,** Israel; **L. Mendia, A. di Pinto,** Italy; **A. Hamada, I. Somiya,** Japan; **A. Al Salem,** Jordan; **H. K. A. Rotich,** Kenya; **S. U. Hong,** Korea; **M. Y. Abdul Raheem,** Kuwait; **K. Kumarasivam,** Malaysia; **G. Cruickshank,** Mexico; **P. Hoogweg, R. R. Kruize,** The Netherlands; **R. Bhamidimarri,** New Zealand; **H. Odegaard,** Norway; **P. P. Almajose,** Philippines; **M. Gromiec,** Poland; **M. M. Pinto,** Portugal; **M. I. Frumkin, G. Pavlova,** Russia; **K. K. Chin,** Singapore; **M. Ros,** Slovenia; **W. O. K. Grabow, P. E. Odendaal, V. van der Merwe,** South Africa; **A. Hernandez,** Spain; **P. Balmer, A. G. Dahlberg,** Sweden; **W. Gujer, B. Jost,** Switzerland; **L. G. Chen, C. F. Ouyang,** Taiwan; **T. Panswad,** Thailand; **D. Orhon,** Turkey; **P. Banks, R. Chapman, J. Tyson,** U.K.; **T. Asano, J. Convery, R. Minear,** U.S.A.; **A. Cutinella,** Uruguay; **G. Rivas-Mijares,** Venezuela; **Nguyen Van Dao,** Vietnam; **M. Miloradov,** Yugoslavia.

Application for membership of the *International Association on Water Quality* should be made to: Executive Director, *IAWQ*, 1 Queen Anne's Gate, London SW1H 9BT, England (*Tel.:* 071-222-3848; *Telex:* 918518 WATAID G; *Fax:* 071-233-1197). Registered Charity (England) No. 289269.

Annual Membership Fees (1994): Corporate Membership is £270.00 and is appropriate to firms, corporate bodies, including all profit-making organizations, departments of government and public administration. These members receive the monthly journals *Water Research* and *Water Science and Technology*. The fee for Individual Membership, which form of membership is not available to any of the above organizations but is strictly reserved for employees, is £44.00, to include a subscription to the journal *Water Research*, or £64.00 for the journal *Water Science and Technology*.

Publishing Office

Elsevier Science Ltd, Bampfylde Street, Exeter EX1 2AH, England [*Tel.* Exeter (01392) 51558; *Fax* (01392) 425370].

Production Editor: N. H. Pym

Subscription and Advertising Offices

North America: Elsevier Science Inc., 660 White Plains Road, Tarrytown, NY 10591-5153, U.S.A.; *Rest of the World:* Elsevier Science Ltd, The Boulevard, Langford Lane, Kidlington, Oxford OX5 1GB, England
[*Tel.* Oxford (01865) 843000; *Fax* (01865) 843010].

Subscription Rates

Annual Institutional Subscription Rates 1995: North, Central and South America, US$1841.00; Rest of the World, £1235.00. Sterling prices exclude VAT. Non-VAT registered customers in the European Community will be charged the appropriate VAT in addition to the price listed. Prices include postage and insurance and are subject to change without notice.

Back Issues

Back issues of all previously published volumes, both in hard copy and in microform, are available direct from Elsevier Science offices.

Published Monthly. Copyright © 1994 Elsevier Science Ltd

Second class postage paid at RAHWAY, NJ. Postmaster send address corrections to *Water Research*, c/o Elsevier Science Inc., 660 White Plains Road, Tarrytown, NY 10591-5153, U.S.A.

KEY WORD INDEX

Authors' key words arranged according to the Aqualine Thesaurus

Abiotic elimination 1051
Acclimation 1779
Acetates 877, 1513
Acetic acid 781, 795
Acetogenesis 27
Acidification 475
Acidogenesis 993, 2101
Activated carbon 263, 687, 1059, 1241, 1407, 1609, 1693, 1735, 1771, 2289
Activated carbon treatment 2309
Activated sludge 67, 269, 297, 417, 491, 501, 511, 657, 737, 1051, 1103, 1117, 1123, 1315, 1329, 1341, 1523, 1715, 1791, 1855, 2029, 2343, 2399, 2417
Activated sludge process 303, 311, 521, 535, 763, 913, 1019, 1571, 1667, 2033
  extended aeration 2087
Activation 1471
Activation analysis 1095
Activity equation 1019
Adaption 1953, 2533
Adenosine triphosphate 1117
Adriatic Sea 619
Adsorption 263, 483, 571, 687, 1051, 1181, 1241, 1285, 1453, 1533, 1735, 2425, 2439, 2561
Adsorption equilibria 1693
Advanced treatment 1103, 1383
Aeration 923
Aerosols 1703
Age distribution 1241
Aggregation 91
Agriculture 395
Air stripping 2253, 2439
Algae 93, 1031
  blue-green 871, 1297, 1891
  Chroococcaceae 871, 1297
  Nostoceae 1297
  green, Oocystaceae 1001
  dinoflagellates 961
Algal inhibition 37
Algal toxins 871, 1297, 1735
Algicides 871
Alkanes 343
Alkylbenzenes 343
Alkylbenzenesulphonate 85, 1953, 2183
Aluminium chloride 1943
Ametryne 2499
Amines 45
Amino acids 1961, 2521
Amino sugars 1961
Aminonaphthalenes 1817, 1827
Ammonia 727, 2055, 2561
  oxidation 1523
  removal 2039
Ammoniacal nitrogen 1403
Ammonium concentration 1523
Anaerobic/aerobic systems 1891, 2087
Anaerobic conditions 2209
Anaerobic fluidized pellet bed reactor 1943
Anaerobic treatment 475, 1743, 1749, 1779
Analysis 147, 619
Anoxic conditions 1253
Antarctic 2585
Antibiotics 2399
API ZYM test 2343
Approximate solution 1167
Aquaculture 2223
Aquariums 1087
Aquatic colloids 107
Aquatic environments 1143, 2507
Aquatic macrophytes 453
  Lemnaceae 1631, 2457, 2469
  Pontederiaceae 1161
Aqueous electron 1227
Arsenic, organic 1187
Arylsulphonates 1855
Ash 2067
Atomic fluorescence 233
Atomic particles 237
Atrazine 483, 1199, 2153, 2165, 2289
Attachment 1619
Australia 2109
Automation 913
Autothermal 1513
Azo dyes 1367

Backwash 2233
Bacteria 27, 417, 427, 1001, 1341, 1799
  Actinomycetales
    Actinomycetaceae 763, 1393
    Nocardiaceae 763, 2343
    Streptomycetaceae 1393
  Bacillaceae, *Clostridium* 1337, 1765

Chemolithotropic
nitrogen 1341
sulphur 355, 951, 1337, 1681, 2263, 2321, 2367
Coliform 805, 841, 1765, 2147
Enterobacteriaceae
Citrobacter 2147
Cloacae 2147
Bacteria, Enterobacteriaceae, continued
Escherichia 1667, 1811, 2331, 2399
Salmonella 171, 581, 2035
faecal 17, 171, 207, 1305, 2331
Legionellaceae 2421
methane 27, 355, 877, 1337, 2383
Oxalobacter formigenes 895
polymer degrading 1341
polyphosphate accumulating 417, 1725
Proprionibacteriaceae 2101
Pseudomonadaceae, *Pseudomonas* 207, 445, 1463, 1667
Vibrionaceae, *Aeromonas* 2241
Bacterial activity 1111
Bacterial composition 2383
Bacterial inhibition 37
Bacterial iron release 417
Bacterial transport 943
Bacteriophages 1811, 2175
Bagasse 2067
Bark 17
Bed load transport 187
Beds, moving 1425
Behavioural toxicity 369
Benzene 1227
Berkeley pit 2321
Binary substrate matrix 599
Binding 445
Bioaccumulation 219, 1039, 1071, 1247, 1933, 2457, 2533, 2553
Bioassays 269, 369
Bioaugmentation 1407
Biodegradability 237, 269, 701, 1563, 1625
Biodegradation 445, 599, 781, 795, 831, 871, 951, 1167, 1407, 1415, 1443, 1533, 1779, 1855, 1873, 1953, 2183, 2289, 2433
Biogeochemistry 323
Biological analysis 1039
Biological availability 1827, 2457
Biological films 967, 1077, 1175, 1189, 1253, 1341, 1425, 1443, 1497, 1953, 1987, 1997, 2021, 2229, 2233, 2263, 2267, 2279
Biological oxidation 1987
Biological reactors 9, 373, 1253, 1305, 1639, 2125, 2233, 2321, 2575
Biological respiration 385
Biological treatment 887, 1077, 1435, 1443, 1453, 1553, 2087
anaerobic 475, 675, 701, 877, 993, 1453
Biomass 2575
Bioremediation 1407, 1415, 2433
Biotransformation 1199, 2553
Bivalves 2219
mussels 85, 1123
oysters 219, 243
Bleacheries waste waters 1835, 1933
Bleaching 237, 1987
Blocking 1505
Boating 2353
Bogs 975, 1961
Bonding, hydrogen 1547
Boundary conditions 1639
Boundary layer 9
Bromates 1087
Bubbleless membrane aeration 2233
Bubbles 465
Budgets 161
Bulking 303, 311, 2033, 2335
Butyrate 993

Cadmium 219, 1711, 2117
Caesium, radioactive 975
Calcium 1755
Calcium carbonate 1681, 2321
Calcium phosphate 1755
Capillary cell 1681
Carbohydrates 251
Carbon 1659
Carbon dioxide 1377
Carbon isotopes 1199
Carbon tetrachloride 2433
Carbonization waste waters 1791
Catalysis 323
Catalysts 2377
Catchment areas 125, 395
Catechols 599
cDNA probe 1
Cell immobilization 993
Cell residence times 1315
Cells, biological 877
Cellular carbon 2263
Cement kiln dust 2067
Centrifuging 91
Cereals processing waste waters 675
Characterization 251
Chemical analysis 901
Chemical inhibitors 877, 1329, 1981, 2101, 2561
Chemical structure 1547
Chemical treatment 1609
Chemicals 2545
Chemisorption 571
Chemistry 819, 1187
Chesapeake Bay 1239
Chloramines 1297, 1475, 1485
Chlorate 1059
Chlorides 201, 849, 1475
Chlorinated organic compounds 895, 1933, 1987, 1997

Chlorination 553, 2499, 2521
Chlorine 1117, 1297, 1497
Chlorine demand 2521
Chlorine oxides 45, 57, 1059, 2133, 2499
Chlorites 1059, 2133
Chloroethane 2507
Chloroguaiacols 1997
Chloroisocyanurates 207
Chloronitrobenzene degradation 1347
Chlorophenols 1323, 1533, 1547, 1845, 1897, 1997, 2047, 2101
Chlorosyringol 1997
Chromatography, liquid 147, 445, 639, 871, 1131, 1143, 1475, 1725, 1735, 1961, 2109, 2499
Chromium 1631, 1981
Ciliates 1315
Clarification 1123
Clays 41, 559, 571
Coagulation 91, 559, 1743, 1749, 1799, 1943, 2439, 2567
Coal industry 1791
Cohesion 187
Coke works wastewaters 701
Cold temperature 501
Colloids 91, 1257, 1443, 1539, 2425
Colonization 831, 2575
Colour 1367
Coloured waters 427, 553
Combination 2133, 2545
Competitive adsorption 1907
Complexation 1181, 2117, 2139, 2457
Complexed metals 2117
Computer programming 913
Concentration 1355, 1539
Concentration ratio 1471
Conductance 277
Conductometric detection 147
Contaminant distribution 2075
Contamination 1415
  industrial 2253
Contour plots 2353
Control 913, 2055
Cooling 1453
Copper 37, 219, 985, 1161, 2117, 2457, 2469, 2487
Copper complexation 37
Correlation analysis 57, 2477
Corrosion 951, 1681
Cosolvency 1553
Countercurrent 2253
Cresols 1673
Crocodile pond water 2035
Crustaceans
  amphipod 369
  Cladocera 581, 743
  mysid 1711
Cryptic growth 863
Cryptosporidium 733
Culture 247, 1873
  continuous flow 781, 795, 1873, 2533, 2561
  suspended 1533
Culture media 743
Cypress leaves 2147

DAPI test 733
Death 171, 2417, 2421
Dechlorination 1897, 2101
Decolourization 277
Decomposition 1475, 1485, 1953, 2533
Deflocculation 417
De-icing agents 1921
Denitrification 511, 521, 535, 657, 709, 1077, 1189, 1253, 1653, 1943, 1981, 2055, 2087, 2209, 2433
Density 2267, 2279
Depuration 2553
Design data 171, 1039, 1851
De-smearing agent 909
Desmetryne 2499
Desorption 571
Detergent ban 1239
Detoxification 237, 887, 1791
Dewatering 417
Diatomaceous earth pellets 831
Diazomethane 2047
Dibutyl phthalate 1247
Diethylaminoethyl cellulose 1961
Diffusion 967, 1039, 2279
Digester gas 727
Digestion
  anaerobic 27, 411, 727, 2383
  thermophilic aerobic 1513
Dihardenedtallowdimethyl ammonium chloride 147
Dilution 993
Diseases
  blood 1059
  infectious 1811
Disinfection 17, 207, 805, 939, 1111, 1153, 1393, 2133
Disk area 1851
Dispersion 335, 1167, 1639
Dissociation constant 1547
Dissolved solids 201
Distribution, mathematical 2267
Disturbance 125
Dot blot test 1
Dry weight 243
Duckweed 2457, 2469
Dye adsorption 2267
Dyes 1051, 1563
Dynamics 1779
  elimination test 1051

Ecology 1667, 1715
Effectiveness factor 2279
Effluent quality 497
Effluent, treated 1891, 2133, 2175

Eggs 219, 939
Electric current 1285
Electrochemical bioreactors 9
Electrochemistry 277, 887, 909, 1771
Electrodes 909
Electrokinetic potential 1609
Electron acceptors 1199, 2433
Electron transfer 57
Electrophoresis 1, 91
Elimination 2567
Emulsions 1743
Engineering 1039
Enumeration 2383
Entrainment 923
Enzymes 1341, 1879
  carbohydrase 67
  extracellular 1443
  hydrolase
    amidase 67
    phosphatase 67, 871
    phosphatase, adenosine 2583
  inducible 247
  oxidoreductase 2469
    dehydrogenase 1117
    oxidase 1835, 1879, 1897
    peroxidase 497, 1595, 1879
Epifluorescence microscopic technique 2263
Equalization 2039
Equilibrium 1181, 1285
Estuaries 571, 985, 2331
Estuarine organisms 1711
Ethanolamine 1601
Ethoxylated alkylphenols 1131, 1143
Ethoxyresorufin-*O*-deethylase enzyme induction 1835
Ethylacetate 2109
Ethylenediaminetetraacetic acid (EDTA) 269, 639
Eutrophication 385, 395, 1971, 2241
Exchanges 1971
Exhaust gases 283
Experimental results 335
Extracellular polymeric substances 2263

Fatty acids 877, 1217, 1329, 1453, 1513
Fenton oxidation 895, 1207
Ferns 1631
Ferromagnetic powder 1175
Field implementation 2545
Field studies 2219
Filamentous organisms 303, 311, 763, 1117, 2033, 2335
Fill and draw system 1667
Filters
  anaerobic 1619
  biological 437, 709, 967, 1039, 1175, 1275, 1619, 2039, 2309
    laboratory 1855
  deep bed 335
  membrane 1257, 1347
  slow 1025
Filtrates 1025
Filtration 91, 1025, 1261, 1691, 2067, 2383
Fish farming 709, 1403
Fish monitor 2191, 2201
Fission 1471
Fixed bed systems 599, 2575
Floc 1799, 2567
Floc forming organisms 303, 311, 763
Flotation processes 465, 675
Flow 161, 1505
  continuous 1667
  rates 201, 1497
Fluidized bed reactors 1189, 1653, 1987, 1997, 2021
Fluorescence 2263
Foaming 763, 2033, 2335, 2343
Force fields 1077
Formate 895
Formation potentials 2521
Formic acid 781, 795
Foul flush 187
Fouling 137
Fourier transform 2139
Fractal dimensions 2229
Fractionation 1103, 1725
Free energy 819
Freeze drying 243
Freezing 2393
Freshwater 161, 1703, 1799
Fungi
  Phanaerochaete chrysosporium 1533, 2583
Fuzzy relational equation 913

Gamma radiation 237
Gas 2407
Gas chromatography 1217, 1595
Gas chromatography-FTIR 1595
Gas chromatography-mass spectrometry 1595, 2047
Gas transfer 923
Genetic engineering 1667
Geochemistry 1585
Geosmin 1393
Glucidolytic populations 2575
Glucose loading rate 1001
Glycosides 961
Granular sludge 631
Graphic arts 1659
Grease 1743, 1749
Greece 2421
Grey box modelling 2055
Grit 187
Groundwater 427, 1095, 1407, 1415, 1539, 1625, 2253
Groundwater denitrification 631
Growth 1001, 1463, 1981

H_2 utilization 1077
H_2S paper strip test 1765
Haemolytic test 961
Half-wave potential 57
Hammett equation 57
Head losses 335, 1025
Heat treatment 1609
Heavy metals 609, 1341, 2139
Hexachlorobenzene 1009
High pH precipitation 2117
Hiroshima Bay, Japan 385
Host organisms 1811
Hotel water system 2421
Humic coatings 571
Humic matter 445, 1031, 1111, 1285, 1383, 1673, 1961
Hybridizing 1, 1715
Hydraulic resistance 1505
Hydrocarbons 1261, 1407, 1415, 2447
Hydrogen atom 1227
Hydrogen ion concentration 161, 993, 1703, 1755, 1817, 2553, 2561
Hydrogen peroxide 45, 1117, 1207, 1845, 1879, 2165, 2507
Hydrogen sulphide 2545
Hydrogen transfer 355
Hydrographs 609
Hydrolysis 501, 1443, 2209, 2417
Hydrophobicity 819
Hydroquinone 599
Hydroxides 2117, 2567
Hydroxyl radical 1207, 1227, 1383, 2165, 2507
Hypobromite 1087
Hypochlorite 1087
Hypochlorous acid 207
Hypolimnetic aeration 2297
Hypothetical components 1693

IAWPRC model 2417
Ideal adsorbed solution theory 1693
Image analysis 2229
Immiscible fluids 2075
Immobilization 993, 1377
Immobilized enzymes 67
Immunofluorescence 733
Incubation 247
Indicators 2393
Industrial wastewaters 1347, 1453
Influent concentrations 2039
Inoculation 1407, 1667
Inorganic associations 91
Inorganic compounds 1257
Insects, diptera, Chironomidae 2553
Interfaces 819, 923
Interstitial waters 1071
In-lake treatment 2297
Iodide 45
Ion exchange 975, 2039
Iron 559, 781, 795, 1207, 1497
  chlorides 559
  ore 2425
  oxidation 323
Irradiation 1595
Irrigation 1305
Isotherms 1735

Kinetics 45, 57, 207, 263, 323, 501, 657, 967, 1019, 1285, 1323, 1383, 1425, 1485, 1523, 1571, 1601, 1693, 1703, 1827, 2021, 2125, 2153, 2367, 2407, 2507
  Michaelis-Menten 1827
  Monod 1639, 2055

Laccase 1879
Lactate degradation 1337
Lagooning 171, 175, 681, 1001, 1031, 1659, 2125
Lagoons 2183, 2399
Lakes 323, 1355, 2297
Leachate 2439
Leaching 975
Lead 219, 985, 1703
Light penetration 91, 1031, 1123, 1539
Lime 2117
Limiting current 9
Lipids 251
Lipolytic populations 2575
Lipopolysaccharides 2263
Loading 675, 717, 849, 2039
Lumped parameters 1693
Lysis 863

Magnetism 1175
Marcus equation 57
Marinas 2353
Mass balance 849, 1435, 1553
Mass spectrometry 2499
Mass transfer 9, 1039, 1077
Mathematical stability 2125
Mechanism 1485
Media 2075
Membrane permeation factor 1355
Membranes 709, 2233
Mercury 233, 931
Metabolism 497
Metal bioleaching 2367
Metal cutting fluids 1453
Metal sulphide precipitation 2321
Metals 665, 1071, 1095, 1103, 1921, 2457
Methane production 195, 355, 475, 781, 795, 2101
Methanogenic sludge 895
Methanol 781, 795
Methods 251, 1435
Methylamines 1329

Methylation 1897
Methylisoborneol 1393
Methylphenol 2047
Micro-organisms 543, 831, 1153, 1347, 1667
Microcolumn 1693
Microelectronics 1435
Micropollutants 581
Microscopy 2033, 2229
Microsites 709
Microtome sections 2229
Microtomy 2267
Migration 2075
Mineralization 1199, 1817, 1827, 2183
Mining wastewaters 2321
Mixture toxicity 543
Mobilization 2487
Modelling 303, 311, 335, 437, 491, 501, 521, 535, 543, 763, 795, 849, 1025, 1039, 1077, 1087, 1095, 1167, 1187, 1199, 1241, 1485, 1693, 1779, 1851, 1861, 2055, 2075, 2125, 2279, 2553
Molecular connectivity 687
Molecular size fractionation 1355
Molecular weight 863
Monitoring 161, 559, 2191, 2201, 2219
Monoaromatic hydrocarbons 1407, 1415
Mono-substrate matrix 599
Morpholine 1601
Morphology 2343
Most probable number 27, 1765, 2035
Multiple exposure 2553
Mutagenicity 553, 581

Natural waters 1285
Nickel 1631, 2117
  electrode 909
Nitrate 1253, 1475, 1485
Nitrification 521, 535, 1275, 1329, 1425, 1943, 2029, 2055, 2087, 2561
Nitrite 45, 1189, 1475, 1485
Nitrobenzenesulphonates 1855
Nitrogen 17, 395, 453, 1659, 2223, 2297, 2309
  compounds 2209
  organic 1453
Nitrogenous organic compounds 1563
Nitronaphthalenes 1817
Nitrophenols 1563, 2047
Nitroquinones 2047
Nodularin 1297
Non-living particles 901
Non steady-state flow reactor 175
Nonyl phenol 343, 1131, 1143
Nonylphenolethoxylates 2109
Nonylphenolpolyethoxylates 1131, 1143
Northern blot test 1
Nuclear magnetic resonance analysis 1103
Nucleosides 1715
Nucleus 733
Nutrients 453, 609, 931, 2297

Oil 1261
  mineral 2353
Olive industry 201
On-line control 913
On-site treatment 17
Optimization 1851, 2067
Organic associations 91
Organic carbon 427, 863, 1463, 1799, 2487, 2585
  total organic carbon 91, 1367, 1383, 1987
Organic compounds 483, 687, 1907, 1953, 2011, 2407
Organic loading 1425
Organic matter 125, 251, 1443, 1735, 1873, 1907, 2567
Organic removal 17
Organic solvent 137
Organoclays 483
Orthogonal collocation 967
Oxalates 895
Oxidation 57, 1207, 1897, 2153, 2165
  carbonaceous 1019
Oxidation reduction potentials 9, 373, 1513, 2087
Oxidative coupling 263, 1673
Oxides 571, 1187
Oxygen 263, 1907
  dissolved 1019, 1425, 1673
Oxygen capacity 437
Oxygen deficiency 385, 2297
Oxygen demand
  biochemical 171, 201, 497, 1123, 1167, 1571, 2585
  chemical 201, 237, 277, 657, 1175, 1367
  sediment 385
Oxygen profiles 1435
Oxygen uptake 385, 1117, 1571
Ozonation 701, 1087, 1563, 2153, 2165, 2309
Ozone 45, 427, 1383, 1791, 2153

Parasites 939
Particles 335
Particulate phase 1553
Partitioning 1009, 1547, 1921
Pathogenic organisms 2133, 2241, 2393
Peat 17, 975, 1261
Peclet number 1167
Percolation 17
Performance 465, 1619
Periphyton 1471
Persistence 871
Pesticides 1199
pH – see Hydrogen ion concentrations
Phase dispersion 1009
Phenolates 57
Phenols 45, 57, 263, 877, 967, 1161, 1563, 1771, 1845, 1879, 1897, 2047

Phenoxide 45, 57
Phormidium 1891
Phosphate 155, 247, 1103, 1725, 2209
  organic 155
  release 2209
Phosphatides 1547, 2267
Phosphorus 395, 453, 717, 931, 1123, 1239, 1355, 1659, 1755, 1971, 2223, 2297
Phosphorus removal 155, 657, 1253, 1513, 1725, 1943, 2087
Photocatalysis 1845
Photochemical oxidation 1323, 2011, 2095, 2407, 2507
Photographic processing wastewaters 269
Photolysis 1475
Photon correlation spectroscopy 91, 1539
Photoreactivity 805
Photoreduction 1207
Photosynthetic activity 1031
Physico-chemical treatment 2439
Picoplanktonic fraction 901
Piggeries waste waters 1891
Pigment, photosynthetic 665, 2297
Pilot plant 1153
Plankton 665, 901, 961, 2297, 2533
Plant operation 67
Point sources 985, 1239
Polarization 1681
Pollutants 369, 681, 1377
Polluting potential 187
Pollution 609, 849, 2253
  coastal waters 619
  non-point sources 395, 985
  point sources 985, 1239
  water 1, 2241, 2477
Pollution indicators 67, 2477
Polychlorinated biphenyls 1207, 1553
Polycyclic aromatic hydrocarbons 343, 619, 2353, 2553
Polyelectrolytes 1943
Polyethoxylate 1009, 1131
Polyethyleneimine 1257
Polysaccharides 1873
Polytox cultures 543
Polyvinylchloride 1619
Population statistics 303, 311, 763
Porosity 1735, 2267, 2279
Potassium permanganate 909
Power generation 665
Precipitation, chemical 1681, 2117
Preliminary treatment 909
Preparation 201
Preservation 841
Priority pollutants 1347
Process control 511, 521, 535
Productivity 665
Prometryne 2499
Proprionate 355, 877, 993, 1513
Protein 251, 2425
Protein phosphatase 871
Proteolysis 2575
Protocatechuic acid 2095
Protozoa 67, 495, 1315
Pulp and paper industry wastewaters 237, 1835, 2583
Pyrene 2553

Quantum yields 2095
Quinone 887

Radiation, ionizing 939, 1227
Radicals 1111
Radioactive isotopes 1471
Rate constants 45, 57, 1485
Recharge 1625
Reclamation of water 1261, 2175
Recreational waters 2241
Recycling 475, 2439
Red water 283
Regeneration 1771, 2417
Regression analysis 951, 2477
Remediation 1009
Remote sensing 751
Removal 681, 1553, 1631, 2175
Reproduction test 743
Reptiles, crocodiles 2035
Reservoirs 665, 1305, 1971, 2353
Resins, ion exchange 581, 1961
Resistance 2399
Resorcinol 599
Respiration 385, 1571, 1861, 2417
Response surface 2067
Retardation 2175
Retention periods 27, 1667
Reuse 119, 1625
Reverse osmosis 1355
Ribonucleic acid 1715, 1811
Ribosomes 1715
Rising sludge 1861
Road dust 985
Rotary perforator 2047
Rotating biological contactor systems 437, 1851
Runoff 2241

Salmon 1403
Salts 559
Samples 147
Sampling apparatus 841
Scales 125
Screening tests 2029
Scums 763, 2343
Sea sediments 619
Sea salt 743
Sea water 2377, 2585
Seasonal effects 1693

Secchi disk 1031
Sediment 67, 85, 147, 187, 385, 453, 619, 643, 985, 1471, 1971, 2353, 2487
Sedimentation 91, 491, 751, 1553
Sedimentation velocity 187
Selector 311
Self aeration 923
Self cleansing 187
Self purification 1953
Sepiolite 195, 411
Seston 125
Seto inland sea, Japan 385
Settling characteristics 1653
Sewage 17, 147, 251, 495, 985, 1153, 1217, 2175, 2241, 2585
Sewage sludge 939, 2067, 2367
Sewage treatment 1131
Sewage works effluents 2109, 2399
Sewerage 1261
Sewers 251
Shear 187
Shear stress 1619
Sigma constant 57
Silver method 495
Silver titanium oxide 1845
Simazine 2289
Single particle analysis 643
Sintered glass 1619
Sinusoidal loading 1167
Size distribution 1539
Skeleton builders 2067
Sludge 147, 155, 343, 2393
Sludge age 1315
Sludge biotic index 67
Sludge conditioning 2067
Sludge dewatering 1019, 2067
Sludge digestion 373, 1367, 1779
Sludge settling 1861
Sludge stability index 1861
Sludge treatment 465, 863, 2209
Slurry reactor 1241, 1845
Smoothing techniques 2139
Sodium dodecylbenzenesulphonate 943
Sodium hydroxide 2545
Sodium hypochlorite 2545
Soil 147, 1199, 1407, 1415, 1817, 2175
  horizons 943, 985
  remediation 2447
Soil/aquifer treatment 1625
Solar radiation 1031, 1153, 1595
Solid state extraction 1595
Solid wastes, alkaline 1377
Solids 291, 297
Solubility diagram 1755
Solubilization 1009, 2117
Soluble phase 1553
Solutes 1585
Solution by series 1639
Solvency 1553
Somatic coliphages 1811
Sonolysis 1383
Sorption 1207, 1553, 1817, 1827, 2447
Source apportionment 1095
Speciation 37, 2139
Specific surface area 2267
Spectroscopy 2223
  infrared 1961
  nuclear magnetic resonance 1103, 1961
  ultraviolet 1961
Spiking 961
Spillway 923
Standards 119, 743
Staphylococcus aureus 207
Starch 1435, 1443
Starch gel electrophoresis 2469
Static elimination test 1051
Steam distillation 343
Sterols 1217
Stevensite 411
Storage 841
  anaerobic 417
Stream flow 1505
Streams, in natural channels 91, 107, 125, 161, 233, 453, 1143, 1167, 1921, 1953
  Chinese 609
  Danube River 751
  James River, Va, USA 1239
  Rhine River, Netherlands 37, 581
Structure activity relationships 57, 543, 687
Struvite 411
Submicron particles 91, 107
Substitution 1817
Substrate adsorption 1019
Substrate utilization 599
Substrates 1443
Succession 1315
Sugar 993, 1435, 1961
Sulphates 195, 781, 795, 1681
Sulphide, acid volatile 1071
Sulphide oxidizing 2377
Sulphide removal 2377
Sulphide toxicity 781, 795
Sulphide wastewater 1987, 1997
Sulphides 877
Sulphite dechlorination 2521
Sulphur 2309
Sulphur oxidizing 2367
Support materials 195, 1175
Surface characteristics 1735
Surface function 1609
Surface water 1585, 2289
Surfactants 147, 943, 1009, 1953
  non-ionic 1131, 1143, 1625
Surveillance 2055
Survival 831, 1667, 2399

Suspended load 751
Suspended solids 187, 201, 643, 1553, 1799, 1921
Suspensions 137
Syntrophic degradation 1337

Tanks, digestion 2383
Tanks, sedimentation, upward flow 291, 355, 631
Tastes and odours 1393, 1595, 2309, 2545
Temperature 501, 727, 1921, 2477, 2561
  effects 1039, 2367
Terbutryne 2499
Tertiary treatment 1891
Test kits 2223
Textile industry wastewaters 277, 1367, 1855
Thermal discharge effects 665
Thermospray 2499
Thickening 465, 2209
Thickness 967
Three-phase flow 2075
Time series analysis 2055
Tin, organic compounds 2533
Titanium oxide 1845
Titration 2109
Toluene 1227, 1897
Topsoil 985
Tortuosity 2279
Total organic halide formation potential 2521
Toxic substances 1779
Toxicity 85, 237, 283, 369, 543, 581, 887, 1117, 1367, 1711, 1791, 1879, 2547
  tests 2029, 2263, 2583
Toxicology 369, 931
Toxins 961, 1297
Transformation 1131, 1143, 1207, 1659
Transmission electron microscopy 91
Transport 2175, 2447
Treatment plants 1217
Triazines 2499
Trichloroanisole 1393
Trichlorophenols 445, 1393, 1997
Trihalomethane formation potential 2521
Trimethylsulphonium hydroxide 2047
Trinitrotoluene 283
Trophic state 665
Trophic system 717, 901
Trout, freshwater 1835
Turbidity 417
Tyrosinase 1879

Ultrafiltration 137, 291, 297, 1355
Ultraviolet radiation 701, 805, 1111, 2011, 2095, 2165, 2407
Unidentified product 1485
Unsteady-state flow reactor 1305
Upgrading treatment plants 2039
Urban runoff 187

Validation 849
Valve movements 2219
Vapour 2447
Variability 125
Vehicle industry wastewaters 1453
Venice Lagoon 67
Virological pollution 1
Viruses 1, 2175, 2425
  poliomyelitis 2175, 2425
Vitamins 737
Voltammetry 1285, 1703, 2139

Waste catalysts 2377
Wastewater 237, 1253, 1261, 1403, 1631, 1743, 1749, 1811, 1879, 1987, 1997, 2109, 2457, 2469
Wastewater reservoirs 175
Wastewater storage 175, 1305
Wastewater treatment 119, 155, 175, 297, 437, 491, 511, 521, 535, 737, 887, 1261, 1305, 1601, 2233
Water 137, 639, 1765, 1811, 2499
Water analysis 2047
Water pollution control 1261
Water quality, natural waters 841, 1139, 1755, 2297
Water quality, treated waters 119
Water quality assessment 2223
Water supplies, potable 1059, 1275, 1497, 1595, 1765, 2147
Water table 2075
Water temperatures 1497
Water treatment 45, 57, 119, 687, 1025, 1475, 2153, 2165, 2321, 2407
Weathering 609
Wet air oxidation 283, 1601
Wet weight 243
Wetlands 395
Wood 17
Wool industry 1743, 1749
Worms
  annelid, Oligochaeta 1071
  helminths 939
  nematode 171

Zeolites 483
Zinc 219, 985, 1161, 1703
Zonation 2575

CONTENTS OF VOLUME 28

JANUARY

iii Notes for Contributors

MICHELE MUSCILLO, FRANCESCA ANNA AULICINO, ANNA MARIA PATTI, PATRIZIA ORSINI, LAURA VOLTERRA and GAETANO MARIA FARA — 1 Molecular techniques for the identification of enteric viruses in marine waters

YUTAKA SAKAKIBARA Ⓜ, JOSEPH R. V. FLORA, MAKRAM T. SUIDAN Ⓜ, PRATIM BISWAS and MASAO KURODA Ⓜ — 9 Measurement of mass transfer coefficients with an electrochemical method using dilute electrolyte solutions

PIET N. LENS, PIET M. VOCHTEN, LODE SPELEERS and WILLY H. VERSTRAETE Ⓜ — 17 Direct treatment of domestic wastewater by percolation over peat, bark and woodchips

TIAN CHENG ZHANG and TATSUYA NOIKE — 27 Influence of retention time on reactor performance and bacterial trophic populations in anaerobic digestion processes

DINY M. J. TUBBING, WIM ADMIRAAL, ROB F. M. J. CLEVEN, MOHAMMED IQBAL, DIK VAN DE MEENT Ⓜ and WILKO VERWEIJ — 37 The contribution of complexed copper to the metabolic inhibition of algae and bacteria in synthetic media and river water

JÜRG HOIGNÉ and HEINZ BADER — 45 Kinetics of reactions of chlorine dioxide (OClO) in water—I. Rate constants for inorganic and organic compounds

PAUL G. TRATNYEK Ⓜ and JÜRG HOIGNÉ — 57 Kinetics of reactions of chlorine dioxide (OClO) in water—II. Quantitative structure–activity relationships for phenolic compounds

PAOLO MADONI Ⓜ — 67 A Sludge Biotic Index (SBI) for the evaluation of the biological performance of activated sludge plants based on the microfauna analysis

N. SABIL, A. CHERQUI, D. TAGLIAPIETRA and M-A. COLETTI-PREVIERO — 77 Immobilized enzymatic activity in the Venice lagoon sediment

MARIA G. MARIN, LUIGI PIVOTTI, GIANCARLO CAMPESAN, MARGHERITA TURCHETTO and LAURA TALLANDINI — 85 Effects and fate of sediment-sorbed linear alkylbenzene sulphonate (LAS) on the bivalve mollusc *Mytilus galloprovincialis* Lmk

DIDIER PERRET, MEREDITH E. NEWMAN, JEAN-CLAUDE NÈGRE, YUWEI CHEN and JACQUES BUFFLE — 91 Submicron particles in the Rhine River—I. Physico-chemical characterization

MEREDITH E. NEWMAN, MONTSERRAT FILELLA Ⓜ, YUWEI CHEN, JEAN-CLAUDE NÈGRE, DIDIER PERRET and JACQUES BUFFLE — 107 Submicron particles in the Rhine River—II. Comparison of field observations and model predictions

I. HESPANHOL and A. M. E. PROST — 119 WHO guidelines and national standards for reuse and water quality

J. POZO, A. ELOSEGUI and A. BASAGUREN — 125 Seston transport variability at different spatial and temporal scales in the Agüera watershed (north Spain)

K. SCOTT, A. ADHAMY, W. ATTECK and C. DAVIDSON — 137 Crossflow microfiltration of organic/water suspensions

P. GERIKE, H. KLOTZ, J. G. A. KOOIJMAN, E. MATTHIJS and J. WATERS — 147 The determination of dihardenedtallowdimethyl ammonium compounds (DHTDMAC) in environmental matrices using trace enrichment techniques and high performance liquid chromatography with conductometric detection

M. Blonda, A. Brunetti, S. Morrone, R. Ramadori Ⓜ and J. W. May Ⓜ — 155 Determination of orthophosphate in activated sludges from wastewater-treatment systems showing enhanced biological phosphate removal

W. Davison, M. Hill, C. Woof, M. Rouen and D. Aspinall — 161 Continuous measurement of stream pH. Evaluation of procedures and comparison of resulting hydrogen ion budgets with those from flow-weighted integrating samplers

B. El Hamouri Ⓜ, K. Khallayoune, K. Bouzoubaa, N. Rhallabi and M. Chalabi — 171 High-rate algal pond performances in faecal coliforms and helminth egg removals

Marcelo Juanico Ⓜ and Gedaliah Shelef Ⓜ — 175 Design, operation and performance of stabilization reservoirs for wastewater irrigation in Israel

Michel A. Verbanck Ⓜ, Richard M. Ashley Ⓜ and André Bachoc — 187 International workshop on origin, occurrence and behaviour of sediments in sewer systems: summary of conclusions

M. Ascensión Muñoz, Jose M. Sanchez, Jose M. Rodríguez-Maroto, Miguel A. Moriñigo and Juan J. Borrego Ⓜ — 195 Evaluation of the use of sepiolite to optimize the methanogenesis from anaerobic domestic sludges in laboratory conditions

G. C. Kopsidas — 201 Wastewater from the table olive industry

G. Golaszewski et R. Seux Ⓜ — 207 Cinétiques de l'action bactéricide des chloroisocyanurates sur trois bactéries: *Pseudomonas aeruginosa*, *Streptococcus faecalis* et *Staphylococcus aureus*

J.-C. Amiard Ⓜ, C. Metayer, J.-P. Baud et F. Ribeyre — 219 Influence de facteurs écologiques et biologiques sur la bioaccumulation d'éléments métalliques chez de jeunes huîtres (*Crassostrea gigas* Thunberg) au cours du prégrossissement en nourricerie

J. Janjić and J. Kiurski — 233 Non-flame atomic fluorescence as a method for mercury traces determination

Research Note
Tiezheng Wang, Thomas D. Waite Ⓜ, Charles Kurucz Ⓜ and William J. Cooper — 237 Oxidant reduction and biodegradability improvement of paper mill effluent by irradiation

Technical Note
Cheol Mo and Bruce Neilson — 243 Standardization of oyster soft tissue dry weight measurements

Rapid Communication
Y. Ubukata and S. Takii — 247 Induction ability of excess phosphate accumulation for phosphate removing bacteria

Erratum — I

FEBRUARY

iii Notes for Contributors

Kamma Raunkjær, Thorkild Hvitved-Jacobsen and Per Halkjær Nielsen Ⓜ — 251 Measurement of pools of protein, carbohydrate and lipid in domestic wastewater

Radisav D. Vidic Ⓜ, Makram T. Suidan Ⓜ and Richard C. Brenner — 263 Impact of oxygen mediated oxidative coupling on adsorption kinetics

Spyros G. Pavlostathis Ⓜ and Douglas Morrison — 269 Response of continuous-flow activated sludge reactors to photo-processing wastewaters

Sheng H. Lin and Chi F. Peng — 277 Treatment of textile wastewater by electrochemical method

Oliver J. Hao Ⓜ, Kotu K. Phull and Jin M. Chen — 283 Wet oxidation of TNT red water and bacterial toxicity of treated waste

A. D. Bailey, G. S. Hansford and P. L. Dold — 291 The enhancement of upflow anaerobic sludge bed reactor performance using crossflow microfiltration

A. D. Bailey, G. S. Hansford and P. L. Dold	297	The use of crossflow microfiltration to enhance the performance of an activated sludge reactor
J. Kappeler Ⓜ and W. Gujer Ⓜ	303	Development of a mathematical model for "aerobic bulking"
J. Kappeler Ⓜ and W. Gujer Ⓜ	311	Verification and applications of a mathematical model for "aerobic bulking"
R. C. Barry, J. L. Schnoor, B. Sulzberger, L. Sigg and W. Stumm	323	Iron oxidation kinetics in an acidic alpine lake
John E. Tobiason Ⓜ and Balasubramaniam Vigneswaran	335	Evaluation of a modified model for deep bed filtration
A. J. Sweetman	343	Development and application of a multi-residue analytical method for the determination of *n*-alkanes, linear alkylbenzenes, polynuclear aromatic hydrocarbons and 4-nonylphenol in digested sewage sludges
Hideki Harada Ⓜ, Shigeki Uemura Ⓜ and Kiyoshi Momonoi Ⓜ	355	Interaction between sulfate-reducing bacteria and methane-producing bacteria in UASB reactors fed with low strength wastes containing different levels of sulfate
D. Pascoe Ⓜ, T. J. Kedwards, S. J. Maund, E. Muthi and E. J. Taylor	369	Laboratory and field evaluation of a behavioural bioassay—the *Gammarus pulex* (L.) precopula separation (GaPPS) test
David G. Wareham Ⓜ, Donald S. Mavinic Ⓜ and Kenneth J. Hall	373	Sludge digestion using ORP-regulated aerobic–anoxic cycles
Tohru Seiki, Hirofumi Izawa, Etsuji Date and Hiroshi Sunahara Ⓜ	385	Sediment oxygen demand in Hiroshima Bay
J. M. Dorioz Ⓜ et A. Ferhi	395	Pollution diffuse et gestion du milieu agricole: transferts comparés de phosphore et d'azote dans un petit bassin versant agricole
C. Maqueda J. L. Pérez Rodríguez and J. Lebrato	411	Study of struvite precipitation in anaerobic digesters
Hanne Rasmussen, Jacob Højgaard Bruus, Kristian Keiding and Per Halkjær Nielsen Ⓜ	417	Observations on dewaterability and physical, chemical and microbiological changes in anaerobically stored activated sludge from a nutrient removal plant
Susan M. Bradford, Carol J. Palmer and Betty H. Olson	427	Assimilable organic carbon concentrations in Southern California surface and groundwater
M. Ferchichi, A. Ghrabi et A. Grasmick Ⓜ	437	Epuration d'eau usée urbaine par biodisques et lit bactérien
Kevin G. Robinson Ⓜ and John T. Novak Ⓜ	445	Fate of 2,4,6-trichloro-(^{14}C)-phenol bound to dissolved humic acid
P. A. Chambers and E. E. Prepas	453	Nutrient dynamics in riverbeds: the impact of sewage effluent and aquatic macrophytes
Sander E. de Rijk, Jaap H. J. M. van der Graaf and Jan G. den Blanken	465	Bubble size in flotation thickening
M. Romli, P. F. Greenfield Ⓜ and P. L. Lee	475	Effect of recycle on a two-phase high-rate anaerobic wastewater treatment system
J. Y. Bottero Ⓜ, K. Khatib, F. Thomas, K. Jucker, J. L. Bersillon and J. Mallevialle	483	Adsorption of atrazine onto zeolites and organoclays, in the presence of background organics
Research Note		
R. Tenno and M. Pelkonen	491	Activated sludge concentration dynamics
Technical Notes		
Dimas Fernández-Galiano	495	The ammoniacal silver carbonate method as a general procedure in the study of protozoa from sewage (and other) waters
B. B. Hosetti and S. Frost	497	Catalase activity in wastewater
Corrigendum	I	

MARCH

	iii	Notes for Contributors
S. TIAN, L. LISHMAN and K. L. MURPHY Ⓜ	501	Investigations into excess activated sludge accumulation at low temperatures
S. H. ISAACS, M. HENZE Ⓜ, H. SØEBERG and M. KÜMMEL Ⓜ	511	External carbon source addition as a means to control an activated sludge nutrient removal process
H. ZHAO, S. H. ISAACS, H. SØEBERG and M. KÜMMEL Ⓜ	521	A novel control strategy for improved nitrogen removal in an alternating activated sludge process—Part I. Process analysis
H. ZHAO, S. H. ISAACS, H. SØEBERG and M. KÜMMEL Ⓜ	535	A novel control strategy for improved nitrogen removal in an alternating activated sludge process—Part II. Control development
N. NIRMALAKHANDAN Ⓜ, V. ARULGNANENDRAN, M. MOHSIN, B. SUN and F. CADENA	543	Toxicity of mixtures of organic chemicals to microorganisms
VIVI-ANN LÅNGVIK and BJARNE HOLMBOM	553	Formation of mutagenic organic by-products and AOX by chlorination of fractions of humic water
HSIAO-WEI CHING, THEODORE S. TANAKA and MENACHEM ELIMELECH Ⓜ	559	Dynamics of coagulation of kaolin particles with ferric chloride
JUN L. ZHOU Ⓜ, STEVE ROWLAND, R. FAUZI C. MANTOURA and JIM BRAVEN	571	The formation of humic coatings on mineral particles under simulated estuarine conditions—a mechanistic study
A. J. HENDRIKS, J. L. MAAS-DIEPEVEEN, A. NOORDSIJ and M. A. VAN DER GAAG	581	Monitoring response of XAD-concentrated water in the Rhine delta: a major part of the toxic compounds remains unidentified
M. LATKAR and T. CHAKRABARTI	599	Resorcinol, catechol and hydroquinone biodegradation in mono and binary substrate matrices in upflow anaerobic fixed-film fixed-bed reactors
J. ZHANG, W. W. HUANG, M. G. LIU and J. Z. CUI	609	Eco-social impact and chemical regimes of large Chinese rivers—a short discussion
MLADEN PICER and VERA HOCENSKI	619	Evaluation of modifications of the simple spectrofluorometry method for estimating petroleum hydrocarbon levels in sea sediment samples
M. GREEN Ⓜ, S. TARRE, M. SCHNIZER, B. BOGDAN, R. ARMON and G. SHELEF Ⓜ	631	Groundwater denitrification using an upflow sludge blanket reactor
P. J. M. BERGERS and A. C. DE GROOT	639	The analysis of EDTA in water by HPLC
ANNICK VAN PUT, RENÉ VAN GRIEKEN, ROLF-DIETER WILKEN and BARBARA HUDEC	643	Geochemical characterization of suspended matter and sediment samples from the Elbe river by EPXMA
PETER GRIFFITHS	657	Modifications to the IAWPRC Task Group general activated sludge model
MICHAEL A. MALLIN, KAREN L. STONE and M. ANNE PAMPERL	665	Phytoplankton community assessments of seven southeast U.S. cooling reservoirs
R. BLASZCZYK, D. GARDNER and N. KOSARIC Ⓜ	675	Response and recovery of anaerobic granules from shock loading
DAI SHUGUI, RAO XIN, WANG JUXIAN, LIU QINGYU, ZHU RUIZHI and SONG RENGAO	681	Removal of priority organic pollutants in stabilization ponds
DIANE J. W. BLUM, IRWIN H. SUFFET and J. P. DUGUET	687	Quantitative structure–activity relationship using molecular connectivity for the activated carbon adsorption of organic chemicals in water
QIAN YI, WEN YIBO and ZHANG HUIMING	701	Efficacy of pre-treatment methods in the activated sludge removal of refractory compounds in coke-plant wastewater
K.-U. RICHTER and G. KRÜNER	709	Elimination of nitrogen in two flooded and statically packed bed biofilters with aerobic and anaerobic microsites
VERA ISTVÁNOVICS	717	Fractional composition, adsorption and release of sediment phosphorus in the Kis-Balaton reservoir

I. Angelidaki and B. K. Ahring Ⓜ 727 Anaerobic thermophilic digestion of manure at different ammonia loads: effect of temperature

A. M. Grimason, H. V. Smith, J. F. W. Parker, Z. Bukhari, A. T. Campbell and L. J. Robertson 733 Application of DAPI and immunofluorescence for enhanced identification of *Cryptosporidium* spp oocysts in water samples

Research Note
Hilde Lemmer Ⓜ and Lutz Nitschke 737 Vitamin content of four sludge fractions in the activated sludge wastewater treatment process

Comment
Allen P. Davis and Muhammad S. Vohra 741 Comment on "Biosorption of chlorophenols to anaerobic granular sludge" by K. J. Kennedy, J. Lu and W. W. Mohn

Rapid Communication
B. Klüttgen, U. Dülmer, M. Engels and H. T. Ratte 743 ADaM, an artificial freshwater for the culture of zooplankton

Forthcoming Conferences 747

Acknowledgement to Referees I

APRIL

iii Notes for Contributors

G. Reichel and H. P. Nachtnebel 751 Suspended sediment monitoring in a fluvial environment: advantages and limitations applying an acoustic Doppler Current Profiler

J. Kappeler Ⓜ and W. Gujer Ⓜ 763 Scumming due to actinomycetes: towards a better understanding by modelling

Ashutosh Gupta Ⓜ, Joseph R. V. Flora, Munish Gupta, Gregory D. Sayles and Makram T. Suidan Ⓜ 781 Methanogenesis and sulfate reduction in chemostats—I. Kinetic studies and experiments

Ashutosh Gupta Ⓜ, Joseph R. V. Flora, Gregory D. Sayles and Makram T. Suidan Ⓜ 795 Methanogenesis and sulfate reduction in chemostats—II. Model development and verification

Karl G. Lindenauer and Jeannie L. Darby 805 Ultraviolet disinfection of wastewater: effect of dose on subsequent photoreactivation

K. T. Valsaraj 819 Hydrophobic compounds in the environment: adsorption equilibrium at the air–water interface

P. J. Sturman, W. L. Jones and W. G. Characklis 831 Interspecies competition in colonized porous pellets

C. M. Ferguson 841 Refrigerated autosampling for the assessment of bacteriological water quality

Susan M. Doerr, Steve W. Effler, Keith A. Whitehead, Martin T. Auer, MaryGail Perkins and Thomas M. Heidtke 849 Chloride model for polluted Onondaga Lake

A. Häner, C. A. Mason and G. Hamer Ⓜ 863 Death and lysis during aerobic thermophilic sludge treatment: characterization of recalcitrant products

Gary J. Jones and Philip T. Orr 871 Release and degradation of microcystin following algicide treatment of a *Microcystis aeruginosa* bloom in a recreational lake, as determined by HPLC and protein phosphatase inhibition assay

Keisuke Hanaki Ⓜ, Sompong Hirunmasuwan and Tomonori Matsuo Ⓜ 877 Protection of methanogenic bacteria from low pH and toxic materials by immobilization using polyvinyl alcohol

Cesar Pulgarin, Nevenka Adler, Paul Péringer and Christos Comninellis 887 Electrochemical detoxification of a 1,4-benzoquinone solution in wastewater treatment

Osamu Koyama, Yoichi Kamagata and Kazunori Nakamura Ⓜ	895	Degradation of chlorinated aromatics by Fenton oxidation and methanogenic digester sludge
Thomas E. Jensen and William A. Corpe	901	Elemental analysis of non-living particles in picoplankton fractions from oligotrophic lake water
S. M. Lan, Y. Y. Wang, C. C. Wan and J. C. Chang	909	Electrochemical regeneration of $KMnO_4$ on a nickel electrode
Y. P. Tsai, C. F. Ouyang, W. L. Chiang and M. Y. Wu	913	Construction of an on-line fuzzy controller for the dynamic activated sludge process
Hubert Chanson	923	Air–water interface area in self-aerated flows
Chung-Yuan Chen Ⓜ	931	Theoretical evaluation of the inhibitory effects of mercury on algal growth at various orthophosphate levels
Petr Horák	939	Experimental destruction of ascarid ova in sewage sludge by accelerated electron irradiation
Andrew Jackson, D. Roy and G. Breitenbeck	943	Transport of a bacterial suspension through a soil matrix using water and an anionic surfactant
Ching-Gang Peng Ⓜ, Jae K. Park Ⓜ and Robert W. Patenaude	951	Statistics-based classification of microbially influenced corrosion in freshwater systems
Geneviève Arzul, Patrick Gentien and Marie-Pierre Crassous	961	A haemolytic test to assay toxins excreted by the marine dinoflagellate *Gyrodinium* cf. *aureolum*
Charng-Gwo Jih and Ju-Sheng Huang	967	Effect of biofilm thickness distribution on substrate-inhibited kinetics
J. Hilton and P. Spezzano	975	An investigation of possible processes of radiocaesium release from organic upland soils to water bodies
C. H. Moon, Y. S. Lee and T. H. Yoon	985	Variation of trace Cu, Pb and Zn in sediment and water of an urban stream resulting from domestic effluents
Research Note		
Keisuke Hanaki Ⓜ, Sompong Hirunmasuwan and Tomonori Matsuo Ⓜ	993	Selective use of microorganisms in anaerobic treatment processes by application of immobilization
Comment		
J. C. Agunwamba	997	Comment on "The effect of physical configuration on the performance of laboratory-scale oxidation ponds" by B. M. A. Al-Khateeb and T. H. Y. Tebbutt
Authors' Reply		
B. M. A. Al-Khateeb and T. H. Y. Tebbutt	999	Authors' Reply

MAY

	iii	Notes for Contributors
Aloice W. Mayo and Tatsuya Noike Ⓜ	1001	Effect of glucose loading on the growth behavior of *Chlorella vulgaris* and heterotrophic bacteria in mixed culture
Chad T. Jafvert Ⓜ, Patricia L. Van Hoof and Janice K. Heath	1009	Solubilization of non-polar compounds by non-ionic surfactant micelles
H. B. Tench	1019	A theory of the operation of full scale activated sludge plants
C. S. P. Ojha and N. J. D. Graham Ⓜ	1025	Computer-aided simulation of slow sand filter performance
T. P. Curtis Ⓜ, D. D. Mara Ⓜ, N. G. H. Dixo and S. A. Silva Ⓜ	1031	Light penetration in waste stabilization ponds
Yilmaz Muslu	1039	Temperature and surface effects within granular-media biofilms
Udo Pagga and Klaus Taeger	1051	Development of a method for adsorption of dyestuffs on activated sludge

Nancy Gonce and Evangelos A. Voudrias	1059	Removal of chlorite and chlorate ions from water using granular activated carbon
Gerald T. Ankley, Edward N. Leonard and Vincent R. Mattson	1071	Prediction of bioaccumulation of metals from contaminated sediments by the oligochaete, *Lumbriculus variegatus*
Yutaka Sakakibara, Joseph R. V. Flora, Makram T. Suidan and Masao Kuroda	1077	Modeling of electrochemically-activated denitrifying biofilms
Gordan Grguric, John H. Trefry and Jeffrey J. Keaffaber	1087	Ozonation products of bromine and chlorine in seawater aquaria
Ilhan Olmez, Jack W. Beal and J. F. Villaume	1095	A new approach to understanding multiple-source groundwater contamination: factor analysis and chemical mass balances
Isolde Röske and Christiane Schönborn	1103	Interactions between chemical and advanced biological phosphorus elimination
Vidar Lund and Dag Hongve	1111	Ultraviolet irradiated water containing humic substances inhibits bacterial metabolism
Chang-won Kim, Ben Koopman and Gabriel Bitton	1117	INT-dehydrogenase activity test for assessing chlorine and hydrogen peroxide inhibition of filamentous pure cultures and activated sludge
G. L. Mackie and C. A. Wright	1123	Ability of the zebra mussel, *Dreissena polymorpha* to biodeposit and remove phosphorus and BOD from diluted activated sewage sludge
Marijan Ahel, Walter Giger and Markus Koch	1131	Behaviour of alkylphenol polyethoxylate surfactants in the aquatic environment—I. Occurrence and transformation in sewage treatment
Marijan Ahel, Walter Giger and Christian Schaffner	1143	Behaviour of alkylphenol polyethoxylate surfactants in the aquatic environment—II. Occurrence and transformation in rivers
A. J. Acher, E. Fischer and Y. Manor	1153	Sunlight disinfection of domestic effluents for agricultural use
Yahya M. Nor	1161	Phenol removal by *Eichhornia crassipes* in the presence of trace metals
Donald Dean Adrian, Fang Xin Yu and Donald Barbe	1167	Water quality modeling for a sinusoidally varying waste discharge concentration
Yasuzo Sakai, Yuki Nitta and Fujio Takahashi	1175	A submerged filter system consisting of magnetic tubular support media covered with a biofilm fixed by magnetic force
C. D. Cox and M. M. Ghosh	1181	Surface complexation of methylated arsenates by hydrous oxides
V. Lazarova, B. Capdeville and L. Nikolov	1189	Influence of seeding conditions on nitrite accumulation in a denitrifying fluidized bed reactor
Dhileepan R. Nair and Jerald L. Schnoor	1199	Effect of soil conditions on model parameters and atrazine mineralization rates
David L. Sedlak and Anders W. Andren	1207	The effect of sorption on the oxidation of polychlorinated biphenyls (PCBs) by hydroxyl radical
Michelle Quéméneur and Yanic Marty	1217	Fatty acids and sterols in domestic wastewaters
Michael G. Nickelsen, William J. Cooper, Kaijun Lin, Charles N. Kurucz and Thomas D. Waite	1227	High energy electron beam generation of oxidants for the treatment of benzene and toluene in the presence of radical scavengers
Research Notes		
Frederick A. Hoffman and John W. Bishop	1239	Impacts of a phosphate detergent ban on concentrations of phosphorus in the James River, Virginia
Byung R. Kim, Makram T. Suidan and Urlich K. Traegner	1241	Considering age distribution for a PAC/water slurry reactor model
Xiaolan Wang and C. P. Leslie Grady Jr	1247	Comparison of biosorption isotherms for di-*n*-butyl phthalate by live and dead bacteria
Rapid Communications		
Jens Peter Kerrn-Jespersen, Mogens Henze and Rune Strube	1253	Biological phosphorus release and uptake under alternating anaerobic and anoxic conditions in a fixed-film reactor

R. Zhou, V. Palmer and K. E. Geckeler 1257 Removal of inorganic ions by polymer-based colloid-enhanced membrane filtration in aqueous solution

JUNE

iii Notes for Contributors

Review
Denis Couillard Ⓜ 1261 The use of peat in wastewater treatment

D. V. Vayenas and G. Lyberatos Ⓜ 1275 A novel model for nitrifying trickling filters

A. M. Mota, J. P. Pinheiro and M. L. Gonçalves Ⓜ 1285 Adsorption of humic acid on a mercury/aqueous solution interface

Brenton C. Nicholson Ⓜ, Joanna Rositano and Michael D. Burch 1297 Destruction of cyanobacterial peptide hepatotoxins by chlorine and chloramine

Avital Liran, Marcelo Juanico Ⓜ and Gedaliah Shelef Ⓜ 1305 Coliform removal in a stabilization reservoir for wastewater irrigation in Israel

H. Salvado 1315 Effect of mean cellular retention time on ciliated protozoan populations in urban wastewater treatment plants based on a proposed model

S. Esplugas, P. L. Yue and M. I. Pervez 1323 Degradation of 4-chlorophenol by photolytic oxidation

Ann Marie Eilersen, Mogens Henze Ⓜ and Lene Kløft 1329 Effect of volatile fatty acids and trimethylamine on nitrification in activated sludge

G. Zellner Ⓜ, F. Neudörfer and H. Diekmann Ⓜ 1337 Degradation of lactate by an anaerobic mixed culture in a fluidized-bed reactor

Hilde Lemmer Ⓜ, Doris Roth and Margit Schade 1341 Population density and enzyme activities of heterotrophic bacteria in sewer biofilms and activated sludge

P. R. Brookes and A. G. Livingston 1347 Biological detoxification of a 3-chloronitrobenzene manufacture wastewater in an extractive membrane bioreactor

Mark A. Nanny, Seungdo Kim, Joseph E. Gadomski and Roger A. Minear Ⓜ 1355 Aquatic soluble unreactive phosphorus: concentration by ultrafiltration and reverse osmosis membranes

R. Ganesh, Gregory D. Boardman Ⓜ and Donald Michelsen 1367 Fate of azo dyes in sludges

K. J. Reddy, S. P. Gloss and L. Wang 1377 Reaction of CO_2 with alkaline solid wastes to reduce contaminant mobility

Terese M. Olson and Philippe F. Barbier 1383 Oxidation kinetics of natural organic matter by sonolysis and ozone

S. E. Jensen, C. L. Anders, L. J. Goatcher, T. Perley, S. Kenefick Ⓜ and S. E. Hrudey Ⓜ 1393 Actinomycetes as a factor in odour problems affecting drinking water from the North Saskatchewan River

L. A. Kelly, A. Bergheim and M. M. Hennessy 1403 Predicting output of ammonium from fish farms

W. J. Weber Jr Ⓜ and H. X. Corseuil 1407 Inoculation of contaminated subsurface soils with enriched indigenous microbes to enhance bioremediation rates

H. X. Corseuil and W. J. Weber Jr Ⓜ 1415 Potential biomass limitations on rates of degradation of monoaromatic hydrocarbons by indigenous microbes in subsurface soils

Lars J. Hem, Bjørn Rusten and Hallvard Ødegaard Ⓜ 1425 Nitrification in a moving bed biofilm reactor

Tove A. Larsen Ⓜ and Poul Harremoës Ⓜ 1435 Combined reactor and microelectrode measurements in laboratory grown biofilms

Tove A. Larsen Ⓜ and Poul Harremoës Ⓜ 1443 Degradation mechanisms of colloidal organic matter in biofilm reactors

Byung R. Kim, Devi N. Rai, Jerome F. Zemla, Frank Lipari and Paul V. Harvath — 1453 Biological removal of organic nitrogen and fatty acids from metal-cutting-fluid wastewater

Jorge Frías, Ferran Ribas and Francisco Lucena — 1463 Critical study of the use of *Pseudomonas fluorescens* P17 to determine assimilable organic carbon (AOC)

N. Drndarski and M. Križman — 1471 Radioisotopes in periphyton and sediments from the Kolubara River and its tributaries

Solomon W. Leung and Richard L. Valentine — 1475 An unidentified chloramine decomposition product—I. Chemistry and characteristics

Solomon W. Leung and Richard L. Valentine — 1485 An unidentified chloramine decomposition product—II. A proposed formation mechanism

R. M. Donlan, W. O. Pipes and T. L. Yohe — 1497 Biofilm formation on cast iron substrata in water distribution systems

Research Note
Amruthur S. Ramamurthy, Duc Minh Tran and Luis B. Carballada — 1505 Increased hydraulic resistance in combining open channel flows

Forthcoming Conferences — 1509

JULY

iii Notes for Contributors

A. Chu, D. S. Mavinic, H. G. Kelly and W. D. Ramey — 1513 Volatile fatty acid production in thermophilic aerobic digestion of sludge

Yuichi Suwa, Yasuo Imamura, Tsuneo Suzuki, Tetsundo Tashiro and Yoshikuni Urushigawa — 1523 Ammonia-oxidizing bacteria with different sensitivities to $(NH_4)_2SO_4$ in activated sludges

Bruce E. Logan, Bruce C. Alleman, Gary L. Amy and Robert L. Gilbertson — 1533 Adsorption and removal of pentachlorophenol by white rot fungi in batch culture

Anna Ledin, Stefan Karlsson, Anders Düker and Bert Allard — 1539 Measurements *in situ* of concentration and size distribution of colloidal matter in deep groundwaters by photon correlation spectroscopy

Takuo Kishino and Kunio Kobayashi — 1547 Relation between the chemical structures of chlorophenols and their dissociation constants and partition coefficients in several solvent–water systems

Steven Morris and John N. Lester — 1553 Behaviour and fate of polychlorinated biphenyls in a pilot wastewater treatment plant

Nobuyuki Takahashi, Toshihiro Nakai, Yoshio Satoh and Yoshishige Katoh — 1563 Variation of biodegradability of nitrogenous organic compounds by ozonation

Henri Spanjers, Gustaf Olsson and Abraham Klapwijk — 1571 Determining short-term biochemical oxygen demand and respiration rate in an aeration tank by using respirometry and estimation

A. L. Ramanathan, P. Vaithiyanathan, V. Subramanian and B. K. Das — 1585 Nature and transport of solute load in the Cauvery river basin, India

Lucia Calvosa, Germana Chiodini, Walter Coretti, Paolo Donaggio, Marco Orlandi, Valerio Paratici and Bruno Rindone — 1595 Taste and odour development in water in polyethylene containers exposed to direct sunlight

Vedprakash S. Mishra, Jyeshtharaj B. Joshi and Vijaykumar V. Mahajani — 1601 Kinetics of wet air oxidation of diethanolamine and morpholine

M. Mazet, B. Farkhani et M. Baudu — 1609 Influence d'un traitement thermique ou chimique des charbons actifs sur l'adsorption de composés organiques

G. K. ANDERSON Ⓜ, B. KASAPGIL Ⓜ and O. INCE Ⓜ — 1619 — Comparison of porous and non-porous media in upflow anaerobic filters when treating dairy wastewater

URI ZOLLER — 1625 — Non-ionic surfactants in reused water: are activated sludge/soil aquifer treatments sufficient?

R. K. SRIVASTAV, S. K. GUPTA, K. D. P. NIGAM and P. VASUDEVAN — 1631 — Treatment of chromium and nickel in wastewater by using aquatic plants

HASAN ALI SAN — 1639 — Impact of dispersion and reaction kinetics on performance of biological reactors—solution by "S" series

JIŘÍ MYŠKA and JAN ŠVEC — 1653 — The distributive properties of a fluidized bed with biomass

WEN XIANG-HUA, QIAN YI and GU XIA-SHENG — 1659 — Graphical presentation of the transformation of some nutrients in a wastewater stabilization pond system

MASANORI FUJITA Ⓜ, MICHIHIKO IKE and KAZUYA UESUGI — 1667 — Operation parameters affecting the survival of genetically engineered microorganisms in activated sludge processes

Rapid Communication

TANJU KARANFIL, MARK A. SCHLAUTMAN and WALTER J. WEBER JR — 1673 — Impacts of dissolved oxygen on the sorption of humic substances and the subsequent inhibition of *o*-cresol uptake by granular activated carbon

Authors' Reply

A. BOUSHER, P. BRIMBLECOMBE and D. MIDGLEY — 1679 — Authors' reply to comment by W. R. Haag on "Bromate production in chlorinated waters: reaction of monochloramine and hypobromite", *Wat. Res.* **27,** 521–523 (1993)

Addendum — I

AUGUST

iii — Notes for Contributors

CHING-GANG PENG Ⓜ and JAE K. PARK Ⓜ — 1681 — Electrochemical mechanisms of corrosion influenced by sulfate-reducing bacteria in aquatic systems

EDWARD H. SMITH Ⓜ — 1693 — Bench-scale tests and modeling of adsorption of natural organic matter by activated carbon

W. DAVISON, C. M. AREWGODA, J. HAMILTON-TAYLOR and C. N. HEWITT — 1703 — Kinetics of dissolution of lead and zinc from rural atmospheric aerosols in freshwater and synthetic solutions

SHAUN EMSON Ⓜ and MARK CRANE — 1711 — A comparison of the toxicity of cadmium to the mysid shrimps *Neomysis integer* (Leach) and *Mysidopsis bahia* (Molenock)

WERNER MANZ, MICHAEL WAGNER, RUDOLF AMANN and KARL-HEINZ SCHLEIFER — 1715 — *In situ* characterization of the microbial consortia active in two wastewater treatment plants

MARICA MÜSSIG-ZUFIKA, ANJA KORNMÜLLER, BARBARA MERKELBACH and MARTIN JEKEL — 1725 — Isolation and analysis of intact polyphosphate chains from activated sludges associated with biological phosphate removal

COSIMO DONATI, MARY DRIKAS, ROB HAYES and GAYLE NEWCOMBE — 1735 — Microcystin-LR adsorption by powdered activated carbon

WIPA LAPSIRIKUL, RALF CORD-RUWISCH and GOEN HO Ⓜ — 1743 — Anaerobic bioflocculation of wool scouring effluent

WIPA LAPSIRIKUL, GOEN HO Ⓜ and RALF CORD-RUWISCH — 1749 — Mechanisms in anaerobic bioflocculation of wool scouring effluent

O. A. DIAZ, K. R. REDDY and P. A. MOORE JR — 1755 — Solubility of inorganic phosphorus in stream water as influenced by pH and calcium concentration

G. CASTILLO, R. DUARTE, Z. RUIZ, M. T. MARUCIC, B. HONORATO, R. MERCADO, V. COLOMA, V. LORCA, M. T. MARTINS and B. J. DUTKA — 1765 — Evaluation of disinfected and untreated drinking water supplies in Chile by the H_2S paper strip test

ROBERTO M. NARBAITZ and JIANQI CEN 1771 Electrochemical regeneration of granular activated carbon

W. J. PARKER, H. D. MONTEITH and H. MELCER 1779 Estimation of anaerobic biodegradation rates for toxic organic compounds in municipal sludge digestion

W. H. MOERMAN, D. R. BAMELIS, H. L. VERGOTE, P. M. VAN HOLLE, F. P. HOUWEN and W. H. VERSTRAETE 1791 Ozonation of activated sludge treated carbonization wastewater

I. G. DROPPO and E. D. ONGLEY 1799 Flocculation of suspended sediment in rivers of southeastern Canada

RITVA L. RAJALA-MUSTONEN and HELVI HEINONEN-TANSKI 1811 Sensitivity of host strains and host range of coliphages isolated from Finnish and Nicaraguan wastewater

BILAL AL-BASHIR, JALAL HAWARI, ROLAND LEDUC and RÉJEAN SAMSON 1817 Behavior of nitrogen-substituted naphthalenes in flooded soil—part I. Sorption/desorption and biodegradation

BILAL AL-BASHIR, JALAL HAWARI, RÉJEAN SAMSON and ROLAND LEDUC 1827 Behavior of nitrogen-substituted naphthalenes in flooded soil—part II. Effect of bioavailability on biodegradation kinetics

P. H. MARTEL, T. G. KOVACS, B. I. O'CONNOR and R. H. VOSS 1835 A survey of pulp and paper mill effluents for their potential to induce mixed function oxidase enzyme activity in fish

Research Note

ROSANA M. ALBERICI and WILSON F. JARDIM 1845 Photocatalytic degradation of phenol and chlorinated phenols using $Ag–TiO_2$ in a slurry reactor

Rapid Communication

IAN BUCHANAN and ROLAND LEDUC 1851 Optimizing rotating biological contactor disc area

Corrigendum I

SEPTEMBER

iii Notes for Contributors

PIUS KÖLBENER, URS BAUMANN, ALASDAIR M. COOK and THOMAS LEISINGER 1855 3-Nitrobenzenesulfonic acid and 3-aminobenzesulfonic acid in a laboratory trickling filter: biodegradability with different activated sludges

M. H. KIM, I. A. AL-GHUSAIN, O. J. HAO and B. S. LIM 1861 Modeling of nitrate disappearance and sludge rising in a settling column system

GREGORY M. HALDANE and BRUCE E. LOGAN 1873 Molecular size distributions of a macromolecular polysaccharide (dextran) during its biodegradation in batch and continuous cultures

MICHAEL D. AITKEN, I. JOANNA MASSEY, THEPING CHEN and PHILLIP E. HECK 1879 Characterization of reaction products from the enzyme catalyzed oxidation of phenolic pollutants

R. O. CAÑIZARES-VILLANUEVA, A. RAMOS, A. I. CORONA, O. MONROY, M. DE LA TORRE, C. GOMEZ-LOJERO and L. TRAVIESO 1891 *Phormidium* treatment of anaerobically treated swine wastewater

JOHN M. RYDING, JAAKKO A. PUHAKKA, STUART E. STRAND and JOHN F. FERGUSON 1897 Degradation of chlorinated phenols by a toluene enriched microbial culture

GEORGE A. SORIAL, SPYRIDON P. PAPADIMAS, MAKRAM T. SUIDAN and THOMAS F. SPETH 1907 Competitive adsorption of VOCs and BOM—oxic and anoxic environments

LESLEY A. WARREN and ANN P. ZIMMERMAN 1921 The influence of temperature and NaCl on cadmium, copper and zinc partitioning among suspended particulate and dissolved phases in an urban river

GLORIA YAN and D. GRANT ALLEN 1933 Biosorption of high molecular weight organochlorines in pulp mill effluent

T. SHIMIZU, N. TAMBO, K. KUDO, G. OZAWA and T. HAMAGUCHI 1943 An anaerobic fluidized pellet bed bioreactor process for simultaneous removal of organic, nitrogenous and phosphorus substances

HIDESHIGE TAKADA, KUNIHIRO MUTOH, NAOMICHI TOMITA, TSUYOSHI MIYADZU and NORIO OGURA Ⓜ — 1953 — Rapid removal of linear alkylbenzenesulfonates (LAS) by attached biofilm in an urban shallow stream

J. HEJZLAR, B. SZPAKOWSKA and R. L. WERSHAW — 1961 — Comparison of humic substances isolated from peatbog water by sorption on DEAE-cellulose and amberlite XAD-2

MOHAMED ALAOUI MHAMDI, LOTFI ALEYA and JEAN DEVAUX — 1971 — Phosphorus exchanges between sediment and water in trophically different reservoirs

JERZY MAZIERSKI — 1981 — Effect of chromium (Cr^{VI}) on the growth rate of denitrifying bacteria

M. FAHMY, O. M. KUT and E. HEINZLE — 1987 — Anaerobic–aerobic fluidized bed biotreatment of sulphite pulp bleaching effluents—I. Global parameters

M. FAHMY, O. M. KUT and E. HEINZLE — 1997 — Anaerobic–aerobic fluidized bed biotreatment of sulphite pulp bleaching effluents—II. Fate of individual chlorophenolic compounds

MADHUMITA BHOWMICK and MICHAEL J. SEMMENS — 2011 — Batch studies on a closed loop air stripping process

WANG SHI HE and ZHOU PING — 2021 — Organic matter degradation kinetics in a fluidized bed bioreactor

Rapid Communications

E. ARVIN Ⓜ, S. DYREBORG, C. MENCK and J. OLSEN — 2029 — A mini-nitrification test for toxicity screening, *MINNTOX*

L. A. HORNSBY and N. J. HORAN — 2033 — Isolation of filamentous bacteria from activated sludge using micro-manipulation

M. MADSEN — 2035 — Enumeration of *Salmonellae* in crocodile pond water by direct plate counts and by the MPN technique

BILSEN BELER-BAYKAL Ⓜ, MARTIN OLDENBURG Ⓜ and IVAN SEKOULOV Ⓜ — 2039 — Post equalization of ammonia peaks

Comment

ANUPAM SARKAR — 2043 — Comment on "Evaluation of dechlorination mechanisms during anaerobic fermentation of bleached kraft mill effluent", by W. J. Parker

WAYNE J. PARKER — 2045 — Author's reply

OCTOBER

iii — Notes for Contributors

ANDREAS GEIßLER and H. F. SCHÖLER — 2047 — Gaschromatographic determination of phenol, methylphenols, chlorophenols, nitrophenols and nitroquinones in water at 0.1 $\mu g\,l^{-1}$

JACOB CARSTENSEN, HENRIK MADSEN, NIELS KJØLSTAD POULSEN and MARINUS K. NIELSEN — 2055 — Identification of wastewater treatment processes for nutrient removal on a full-scale WWTP by statistical methods

JAIME BENÍTEZ, ABRAHAM RODRÍGUEZ and ALEJANDRO SUÁREZ — 2067 — Optimization technique for sewage sludge conditioning with polymer and skeleton builders

SHEILA F. KIA and JULIE C. SMITH — 2075 — Distribution of light organic contaminants in the groundwater table vicinity

C. K. LO Ⓜ, C. W. YU Ⓜ, N. F. Y. TAM Ⓜ and S. TRAYNOR — 2087 — Enhanced nutrient removal by oxidation-reduction potential (ORP) controlled aeration in a laboratory scale extended aeration treatment system

F. JAVIER BENITEZ, JESUS BELTRAN-HEREDIA, TERESA GONZALEZ and JUAN L. ACERO — 2095 — Photochemical oxidation of protocatechuic acid

PATRICIA S. PERKINS, SIMEON J. KOMISAR Ⓜ, JAAKKO A. PUHAKKA and JOHN F. FERGUSON Ⓜ — 2101 — Effects of electron donors and inhibitors on reductive dechlorination of 2,4,6-trichlorophenol

M. J. Scarlett, J. A. Fisher, H. Zhang and M. Ronan 2109 Determination of dissolved nonylphenol ethoxylate surfactants in waste waters by gas stripping and isocratic high performance liquid chromatography

O. Tünay and N. I. Kabdaşli 2117 Hydroxide precipitation of complexed metals

D. Prats and F. LLavador 2125 Stability of kinetic models from waste stabilization ponds

Anat Katz, Nava Narkis, Frieda Orshansky, Evgenia Friedland and Yehuda Kott 2133 Disinfection of effluent by combinations of equal doses of chlorine dioxide and chlorine added simultaneously over varying contact times

R. Pardo, E. Barrado, M. Vega, L. Deban and M. L. Tascón 2139 Voltammetric complexation capacity of waters of the Pisuerga River

Peter Paspaliaris and Brian Hodgson 2147 The role of cypress leaves in promoting growth of coliform organisms in a holding reservoir

Fernando J. Beltrán, Juan F. García-Araya and Benito Acedo 2153 Advanced oxidation of atrazine in water—I. Ozonation

Fernando J. Beltrán, Juan F. García-Araya and Benito Acedo 2165 Advanced oxidation of atrazine in water—II. Ozonation combined with ultraviolet radiation

David K. Powelson and Charles P. Gerba 2175 Virus removal from sewage effluents during saturated and unsaturated flow through soil columns

Alfonso Moreno, Juan Ferrer, Francisco Ruiz Beviá, Daniel Prats, B. Vázquez and D. Zarzo 2183 LAS monitoring in a lagoon treatment plant

Ian G. Baldwin, Mark M. I. Harman and David A. Neville 2191 Performance characteristics of a fish monitor for detection of toxic substances—I. Laboratory trials

Ian G. Baldwin, Mark M. I. Harman, David A. Neville and Stephen G. George 2201 Performance characteristics of a fish monitor for detection of toxic substances—II. Field trials

H. Kroiss and M. Negm 2209 The effect of nitrate and treatment process on phosphate release in batch gravity thickener

Technical Notes

Vili P. M. Englund, Mikko P. Heino and George Melas 2219 Field method for monitoring valve movements of bivalved molluscs

Franklin I. Ormaza-González and A. Patricia Villalba-Flor 2223 The measurement of nitrite, nitrate and phosphate with test kits and standard procedures: a comparison

Rapid Communications

Waleed Zahid and Jerzy Ganczarczyk 2229 A technique for a characterization of RBC biofilm surface

M. Pankhania, T. Stephenson and M. J. Semmens 2233 Hollow fibre bioreactor for wastewater treatment using bubbleless membrane aeration

Forthcoming Conferences 2237

NOVEMBER

iii Notes for Contributors

Martha W. Rhodes and Howard Kator 2241 Seasonal occurrence of mesophilic *Aeromonas* spp. as a function of biotype and water quality in temperate freshwater lakes

S. Verma, K. T. Valsaraj, D. M. Wetzel and D. P. Harrison 2253 Direct comparison of countercurrent and cascade crossflow air stripping under field conditions

S. Okabe, P. H. Nielsen, W. L. Jones and W. G. Characklis 2263 Estimation of cellular and extracellular carbon contents in sulfate-reducing bacteria biofilms by lipopolysaccharide assay and epifluorescence microscopic technique

Tian C. Zhang and Paul L. Bishop 2267 Density, porosity, and pore structure of biofilms

Tian C. Zhang and Paul L. Bishop Ⓜ	2279	Evaluation of tortuosity factors and effective diffusivities in biofilms
Stephanie J. Feakin Ⓜ, E. Blackburn and R. G. Burns	2289	Biodegradation of s-triazine herbicides at low concentrations in surface waters
Raymond A. Soltero, Linda M. Sexton, Kenneth I. Ashley and Kim O. McKee	2297	Partial and full lift hypolimnetic aeration of Medical Lake, WA to improve water quality
Yongwoo Hwang, Tomonori Matsuo Ⓜ, Keisuke Hanaki Ⓜ and Noriyuki Suzuki Ⓜ	2309	Removal of odorous compounds in wastewater by using activated carbon, ozonation and aerated biofilter
R. W. Hammack, H. M. Edenborn and D. H. Dvorak	2321	Treatment of water from an open-pit copper mine using biogenic sulfide and limestone: a feasibility study
A. A. Bordalo	2331	Faecal coliform recovery in two standard media along an estuarine gradient
E. M. Seviour, C. Williams Ⓜ, B. DeGrey, J. A. Soddell, R. J. Seviour Ⓜ and K. C. Lindrea	2335	Studies on filamentous bacteria from Australian activated sludge plants
J. A. Soddell and R. J. Seviour Ⓜ	2343	Incidence and morphological variability of *Nocardia pinensis* in Australian activated sludge plants
Trina A. Mastran, Andrea M. Dietrich, Daniel L. Gallagher and Thomas J. Grizzard Ⓜ	2353	Distribution of polyaromatic hydrocarbons in the water column and sediments of a drinking water reservoir with respect to boating activity
R. D. Tyagi, T. R. Sreekrishnan, J. F. Blais Ⓜ and P. G. C. Campbell	2367	Kinetics of heavy metal bioleaching from sewage sludge—III. Temperature effects
J. N. Alhajji and M. R. Reda	2377	Sulfide removal from seawater with waste catalysts
G. K. Anderson Ⓜ, B. Kasapgil and O. Ince	2383	Microbiological study of two-stage anaerobic digestion during start-up
F. Dilek Sanin Ⓜ, P. Aarne Vesilind Ⓜ and C. James Martel Ⓜ	2393	Pathogen reduction capabilities of freeze/thaw sludge conditioning
N. Mezrioui and B. Baleux	2399	Resistance patterns of *E. coli* strains isolated from domestic sewage before and after treatment in both aerobic lagoon and activated sludge
Madhumita Bhowmick and Michael J. Semmens	2407	Ultraviolet photooxidation for the destruction of VOCs in air
Research Note		
L. A. Lishman and K. L. Murphy	2417	The significance of hydrolysis in microbial death and decay
Rapid Communication		
A. Mavridou Ⓜ, M. Lambiri and J. A. Papadakis	2421	A fatality resulting from a case of legionnaires' disease on hotel premises

DECEMBER

	iii	Notes for Contributors
V. L. Vilker, J. Lyklema, W. Norde and B. J. M. Verduin	2425	Interaction between a plant virus and colloidal hematite
R. S. Skeen, K. M. Amos and J. N. Petersen	2433	Influence of nitrate concentration on carbon tetrachloride transformation by a denitrifying microbial consortium
Evan Diamadopoulos Ⓜ	2439	Characterization and treatment of recirculation-stabilized leachate
Chiayang Li and Evangelos A. Voudrias	2447	Migration and sorption of jet fuel aliphatic vapors in unsaturated soil
James A. Buckley Ⓜ	2457	The bioavailability of copper in wastewater to *Lemna minor* with biological and electrochemical measures of complexation
James A. Buckley Ⓜ	2469	The susceptibility of superoxide dismutase in *Lemna minor* to systemic copper concentrated from wastewater

Ružena Markošová and Josef Ježek	2477	Indicator bacteria and limnological parameters in fish ponds
R. Michael Lehman and Aaron L. Mills	2487	Field evidence for copper mobilization by dissolved organic matter
Giuseppe Mascolo, Antonio Lopez, Roberto Passino, Giuseppina Ricco and Giovanni Tiravanti Ⓜ	2499	Degradation of sulphur containing s-triazines during water chlorination
Joseph de Laat, Elmostafa Tace et Marcel Dore Ⓜ	2507	Etude de l'oxydation de chloroéthanes en milieu aqueux dilue par H_2O_2/u.v.
L. Hureiki, J. P. Croué and B. Legube Ⓜ	2521	Chlorination studies of free and combined amino acids
Richard Saint-Louis, Émilien Pelletier, Pierre Marsot et Réal Fournier	2533	Distribution et effets du chlorure de tributylétain et de ses produits de dégradation sur la croissance de l'algue marine *Pavlova lutheri* en culture continue
Mamta Tomar and Tamama H. A. Abdullah Ⓜ	2545	Evaluation of chemicals to control the generation of malodorous hydrogen sulfide in waste water
Eckhart Wildi, Roland Nagel and Christian E. W. Steinberg Ⓜ	2553	Effects of pH on the bioconcentration of pyrene in the larval midge, *Chironomus riparius*
Joost Groeneweg, Beate Sellner and Wolfgang Tappe	2561	Ammonia oxidation in nitrosomonas at NH_3 concentrations near K_m: effects of pH and temperature
F. Julien, B. Gueroux et M. Mazet	2567	Comparaison de l'élimination de molécules organiques par coagulation-floculation et par adsorption sur flocs d'hydroxyde métallique préformés
S. Zinebi, C. Henriette, E. Petitdemange and J. C. Joret	2575	Identification and characterization of bacterial activities involved in wastewater treatment by aerobic fixed-bed reactor
Research Notes		
J. S. Araujo Neto, A. J. Martins Jr and G. L. Sant'Anna Jr	2583	Use of rat brain Na^+, K^+-ATPase assay to determine effectiveness of biological treatment to reduce toxicity of paper mill effluents
James P. Howington, Gordon A. McFeters Ⓜ, Warren L. Jones and James J. Smith	2585	The effect of low temperature on BOD in Antarctic seawater
Comment		
Anupam Sarkar	2589	Comment on "Degradation of polychlorinated dibenzo-*p*-dioxin and dibenzofuran contaminants in 2,4,5-T by photoassisted iron-catalyzed hydrogen peroxide" by J. J. Pignatello and L. Q. Huang
Authors' Reply		
J. J. Pignatello and L. Q. Huang	2596	Authors' Reply
Forthcoming Conferences	2597	